

WHAT IS CLAIMED IS:

5 *sub* 1. A system for application development, the system comprising:

a plurality of programming entities comprising:

a workflow;

a run-time container operable to execute the workflow;

a design-time container operable to edit the workflow; and

10 a contract specifying an interaction between at least two programming entities.

2. The system of Claim 1, wherein:

15 an interactive voice response unit comprises the run-time container; and

the workflow is operable to direct the operation of the interactive voice response unit.

20 3. The system of Claim 1, wherein the contract specifies a service provided by the run-time container to the workflow.

25 4. The system of Claim 1 wherein the contract specifies a service provided by the design-time container to the workflow.

5           5.    The system of Claim 1, wherein:  
            the workflow comprises a workflow step, the workflow  
step operable to be used in a plurality of workflows;  
            the workflow step comprises a variable;  
            a workflow task of the workflow provides a value;  
and  
            the contract associates the variable with the value.

10           6.    The system of Claim 1, wherein:  
            the run-time container comprises a workflow  
subsystem operable to retrieve an execution context for  
the workflow; and  
            the contract specifies the execution context.

15           7.    The system of Claim 1, wherein:  
            the workflow comprises a workflow step operable to  
direct an interactive voice response unit to play a  
message specified in a message variable;  
            a workflow task of the workflow provides a message  
20           value corresponding to the message; and  
            the contract associates the message value with the  
message variable.

25           8.    The system of Claim 1, wherein:  
            the workflow comprises a workflow step operable to  
direct an interactive voice response unit to retrieve  
data specified in a data variable;  
            a workflow task of the workflow provides a data  
value corresponding to the data; and  
30           the contract associates the data value with the data  
variable.

9. A method for application development, the method comprising:

defining a plurality of programming entities comprising:

5           a workflow;  
          a run-time container operable to execute the workflow;  
          a design-time container operable to edit the workflow; and

10          defining a contract specifying an interaction between at least two programming entities.

10. The method of Claim 9, further comprising directing the operation of an interactive voice response unit using the workflow, the interactive voice response unit comprising the run-time container.

11. The method of Claim 9, further comprising:  
20          defining the contract specifying a service provided by the run-time container to the workflow; and  
          executing the workflow using the run-time container.

12. The method of Claim 9, further comprising:  
25          defining the contract specifying a service provided by the design-time container to the workflow; and  
          editing the workflow using the design-time container.

13. The method of Claim 9, further comprising  
defining the contract associating a variable with a  
value, a workflow task providing the value and a workflow  
step, the workflow step operable to be used in a  
plurality of workflows and comprising the variable.

14. The method of Claim 9, further comprising:  
defining the contract specifying an execution  
context for the workflow; and  
retrieving the execution context using the run-time  
container.

15. The method of Claim 9, further comprising:  
defining the workflow comprising a workflow step  
directing an interactive voice response unit to play a  
message specified in a message variable, a workflow task  
providing a message value corresponding to the message;  
defining the contract associating the message value  
with the message variable; and  
playing the message.

16. The method of Claim 9, further comprising:  
defining the workflow comprising a workflow step  
directing an interactive voice response unit to retrieve  
data specified in a data variable, a workflow task  
providing a data value corresponding to the data;  
defining the contract associating the data value  
with the data variable; and  
retrieving the data.

17. Application development software embodied in a computer-readable medium and operable to perform the following:

5 defining a plurality of programming entities comprising:

a workflow;

a run-time container operable to execute the workflow;

10 a design-time container operable to edit the workflow; and

defining a contract specifying an interaction between at least two programming entities.

15 18. The application development software of Claim 17, further operable to perform directing the operation of an interactive voice response unit using the workflow, the interactive voice response unit comprising the run-time container.

20 19. The application development software of Claim 17, further operable to perform:

defining the contract specifying a service provided by the run-time container to the workflow; and

25 executing the workflow using the run-time container.

20. The application development software of Claim 17, further operable to perform:

defining the contract specifying a service provided by the design-time container to the workflow; and

30 editing the workflow using the design-time container.

21. The application development software of Claim 17, further operable to perform defining the contract associating a variable with a value, a workflow task providing the value and a workflow step, the workflow step operable to be used in a plurality of workflows and comprising the variable.

22. The application development software of Claim 17, further operable to perform:

defining the contract specifying an execution context for the workflow; and

retrieving the execution context using the run-time container.

23. The application development software of Claim 17, further operable to perform:

defining the workflow comprising a workflow step directing an interactive voice response unit to play a message specified in a message variable, a workflow task providing a message value corresponding to the message;

defining the contract associating the message value with the message variable; and  
playing the message.

24. The application development software of Claim 17, further operable to perform:

defining the workflow comprising a workflow step  
directing an interactive voice response unit to retrieve  
5 data specified in a data variable, a workflow task  
providing a data value corresponding to the data;

```

    defining the contract associating the data value
with the data variable; and
    retrieving the data.

```

25. A system for application development, the system comprising:

means for defining a plurality of programming entities comprising:

5 a workflow;

a run-time container operable to execute the workflow;

a design-time container operable to edit the workflow; and

10 means for defining a contract specifying an interaction between at least two programming entities.

26. The system of Claim 25, further comprising means for directing the operation of an interactive voice response unit using the workflow, the interactive voice response unit comprising the run-time container.

27. The system of Claim 25, further comprising:  
means for defining the contract specifying a service provided by the run-time container to the workflow; and  
20 means for executing the workflow using the run-time container.

28. The system of Claim 25, further comprising:  
25 means for defining the contract specifying a service provided by the design-time container to the workflow; and  
and  
means for editing the workflow using the design-time container.



29. The system of Claim 25, further comprising  
means for defining the contract associating a variable  
with a value, a workflow task providing the value and a  
workflow step, the workflow step operable to be used in a  
plurality of workflows and comprising the variable.

30. The system of Claim 25, further comprising:  
means for defining the contract specifying an  
execution context for the workflow; and  
means for retrieving the execution context using the  
run-time container.

31. The system of Claim 25, further comprising:  
means for defining the workflow comprising a  
workflow step directing an interactive voice response  
unit to play a message specified in a message variable, a  
workflow task providing a message value corresponding to  
the message;  
means for defining the contract associating the  
message value with the message variable; and  
means for playing the message.

32. The system of Claim 25, further comprising:  
means for defining the workflow comprising a  
workflow step directing an interactive voice response  
unit to retrieve data specified in a data variable, a  
workflow task providing a data value corresponding to the  
data;  
means for defining the contract associating the data  
value with the data variable; and  
means for retrieving the data.

29

33. A system for application development, the system comprising:

a plurality of programming entities comprising:

a workflow step operable to:

5           direct an interactive voice response unit to play a message specified in a message variable;

          direct the interactive voice response unit to retrieve data specified in a data variable;

a workflow comprising the workflow step;

10           a workflow task providing a message value corresponding to the message and a data value corresponding to the data;

          a run-time container operable to execute the workflow;

15           a design-time container operable to edit the workflow;

a contract associating:

          the message value with the message variable;

and

20           the data value with the data variable.